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THE LICHEN-FLORA OF FLORIDA.

Catalogue of Species, with Notes, and also Notices of New Species.

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The authors have undertaken the present paper in the belief that the facts and material in their possession should be published for the benefit of lichenists generally and as a contribution to our knowledge in a little-explored field as regards the subject under consideration. True, numerous collectors have been over the ground and have been well rewarded; but, after all, each additional research brings to light new or rare species and demonstrates that all of us have as yet merely skirmished on the line. The finding of four or five new species during the past winter by one of the authors, within a space less than ten feet square, only shows what to expect in the future, if proper efforts are made. The authors give herein no species not properly verified as being found in Florida, and, indeed, a large proportion are the results of personal collections. The determination has been entirely by the senior author, Dr. Eckfeldt, who, in doubtful or difficult cases, was so fortunate as to secure the valuable assistance of Dr. W. Nylander, of Paris. The new species were determined by the latter world-known lichenist, and, if possible, full descriptions of these will be given. The number enumerated may seem large, and yet we venture to say that in time it will be increased one third or more. The geographical position of Florida, her physical relations past and present to the West Indies and the Antillean system; her climate and soil, as well as parallels of distribution found in her phenogamic botany, warrant our belief. The order of arrangement of the list will be that after Tuckerman (*Genera Lichenum*) and recent writers on special genera in Lichenology.

PARMELIACEI.

USNEI.

RAMALINA ACH., De Not.

1. *R. USNEOIDES* (Ach.) Fr.—Infrequent; on old trunks. Herb. Austin, Lichens of Florida.
2. *R. RIGIDA* (Pers.)—On old trunks; frequent.
3. *R. RIGIDA*, var. *MONTAGNEI*, Tuck.—On old trunks. S. Fla.

4. *R. STENOSPORA*, Mull.—On old trunks. Westward along the Gulf.
5. *R. COMPLANATA* (Sw.) Ach. Westward to Mexico.
6. *R. CALICARIS* (L.) Fr.—Small forms; found on trunks. *CETRARIA* (Ach.) Fr. Mull.
7. *C. CILIARIS* (Ach.)—On dead wood near Palatka. *EVERNIA* (Ach.) Mann.
8. *E. FURFURACEA* (L.) Mann.—Infrequent. *USNEA* (Dill.) Ach.
9. *U. BARBATA* (L.) Ach.—Abundant on various trees.
10. *U. BARBATA*, var. *FLORIDA*, Fr.—Very common.
11. *U. BARBATA*, var. *CERATINA*, Schaer.—Frequent.
12. *U. ANGULATA* (Ach.)—On old trees; not fertile.
13. *U. TRICHODEA*, Ach.—Herb. Schweinitz.

PARMELIEI.

THELOSCHISTES, Norm. emend.

14. *T. CONCOLOR* (Dicks.)—Abundant on various trees.
15. *T. CHRYSOPHTHALMUS* (L.) Norm.—On old trees.
16. *T. FLAVICANS*, Wallr.—Common on old trees.
17. *T. LYCHNEUS* (Nyl.)—Occasional.

PARMELIA (Ach.)—De Not.

18. *P. PERFORATA* (Jacq.) Ach.—Very abundant on oaks.
19. *P. TILICEA* (Hoffm.) Floerk.—Common on various trees.
20. *P. CAPERATA* (L.) Ach.—On trunks, dead wood, etc.
21. *P. LATISSIMA*, Fee.—On smooth trunks.
22. *P. CETRATA*, Ach.—Common.
23. *P. CRINITA*, Ach.—Common.
24. *P. LÆVIGATA* (Sm.) Nyl.—Common.
25. *P. TILIACEA*, var. *SULPHUROSA*, Tuck.—Frequent on old trunks.
26. *P. BORRERA*, Turn.—Northern portions of the state; on trunks; fertile.
27. *P. BORRERA*, var. *RUDECTA*, Tuck.—Frequent on various barks.
28. *P. COLPODES*, Ach. Nyl.—A common lichen; frequently infertile.

29. *P. LEUCOCHLORA*, Tuck.30. *P. CONSPERSA* (Ehrh.)—Ach.

PHYSICIA (D. C., Fr.) Th. Fr.

31. *P. PULVERULENTA* (Schreb.) Nyl.—On *Ficus* and *Quercus*.
32. *P. STELLARIS* (L.)—Common.
33. *P. HYPOLEUCA* (Muhl.) Tuck.
34. *P. RAVENELII*, Tuck.
35. *P. AQUILA* (Ach.) Nyl.
36. *P. AQUILA*, var. *DETONSA*, Tuck.
37. *P. ASTROIDEA* (Fr.) Nyl.
38. *P. CRISPA* (Pers.) Nyl., Herb. Ravenel.
39. *P. TRIBACEA* (Ach.) Tuck.
40. *P. OBSCURA* (Ehrh.) Nyl.
41. *P. ADGLUTINATA* (Fl.) Nyl.

PYXINE, Fr.—Tuck.

- \ 42. P. PICTA (Sw.) Tuck.—Abundant.
 × 43. P. SOREDIATA, Fr.—On *Ficus* and *Sabal*.

PELTIGEREI.

STICTA (Schreb.) Fr.

- × 44. S. AURATA (Sm.) Ach.—On *Magnolias*, etc.
 45. S. CROCATA (L.) Ach.
 46. S. EROSA (Eschw.) Herb. Austin.

NEPHROMA, Ach.

47. N. HELVETICUM, Ach.

PELTIGERA (Willd. Hoffm.) Fee.

48. P. POLYDACTYLA (Neck.) Hoffm.—Common westward to Louisiana.

PANNARIEI.

PHYSMA, Mass.

49. P. LURIDUM (Mont.)—On *Andromeda*.

PANNARIA, Delis.

50. P. RUBIGINOSA (Thunb.) Delis.—On *Andromeda*; abundant.
 51. P. MOLYBDÆA (Pers.) Tuck.—Not common. Herb. Ravenel, Calkins & Eckfeldt.
 52. P. STELLATA (Tuck.) Nyl.—Abundant on *Carpinus*. Calkins.
 53. P. PANNOSA (Sw.) Delis.—Infertile; introduced from the tropics.
 54. P. LEUCOSTICTA, Tuck.

COLLEMEI.

COLLEMA, Hoffm. & Fr.

55. C. AGGREGATUM, Nyl.—Abundant on various shrubs; also in Cuba and Central America.
 56. C. NIGRESCENS (Huds.) Ach.—Common; has a wide range.
 57. C. PYCNOCARPUM, Nyl.
 58. C. CYRTASPIS, Tuck.
 59. C. CALLIBOTRYS, Tuck.
 60. C. LEPTALEUM, Tuck.
 61. C. FLACCIDUM, Ach.

LEPTOGIUM, Fr. & Ach.

62. L. TREMELLOIDES (L. fil.) Fr.—Abundant. Calkins, Herb. Austin.
 63. L. DENDRISCUM, Nyl.—Herb. Eckfeldt.
 64. L. ALBOCILATUM, Desmaz.—Upon mosses in swamps.
 65. L. PULCHELLUM (Ach.) Nyl.
 66. L. FOVEOLATUM, Nyl.—Very closely related to No. 65.
 67. L. MARGINELLUM (Sw.) Herb. Ravenel.
 68. L. CHLOROMELUM (Sw.) Nyl.
 69. L. BULLATUM (Ach.) Mont.—On old trees. Herb. Austin.
 70. L. MYOCHROUM (Ehrh.) Tuck.—In low places.

LECANOREI.

PLACODIUM (DC.) Naeg. & Hepp.

71. P. CINNABARINUM (Ach.) Anz.

× 72. *P. AURANTIACUM*, Ligbt. Naeg. & Hepp.

× 73. *P. CERINUM* (Hedw.) Naeg. & Hepp.

✓ 74. *P. FERRUGINEUM* (Huds.) Hepp.

✓ 75. *P. CAMPTIDIUM*, Tuck.

✓ 76. *P. FLORIDANUM*, Tuck.

✓ 77. *P. VITELLINUM* (Ehrh.) Naeg. & Hepp.

LECANORA, Ach., Tuck.

× 78. *L. PUNICEA*, Ach.—Very abundant on various trees.

✓ 79. *L. PALLESCENS* (L.) Schaer.—On hickory, *Ilex*, etc.

× 80. *L. VARIA* (Ehrh.) Nyl.—On *Castanea*, etc.

× 81. *L. PALLIDA* (Schreb.) Schaer.—Very fine; abundant.

82. *L. PALLADA*, var. *CANCRIFORMIS*, Tuck.—Abundant. *L. caesiobella* of Nylander.

× 83. *L. SUBFUSCA*, Ach.—Common.

✓ 84. *L. SUBFUSCA*, var. *DISTANS*, Ach.—Smaller and paler than the preceding species.

✓ 85. *L. ATRA* (Huds.) Ach.—Very common.

✓ 86. *L. CUPRESSI*, Tuck., *in litt.*—Very common on *Taxodium*. By some considered a variety of *L. varia*; quite distinct.

✓ 87. *L. MICULATA*, Ach.

✓ 88. *L. HAGENI*, Ach.

✓ 89. *L. GRANIFERA*, Ach.

✓ 90. *L. CINEREA* (L.) Somm.

✓ 91. *L. XANTHOPHANA*, Nyl.

✓ 92. *L. FUSCATA* (Schr.) Th. Fr.

✓ 93. *L. PRIVIGNA* (Ach.) Nyl.

RINODINA, Mass.—Stizenz, Tuck.

✓ 94. *R. CHRYSOMELÆNA* (Ach.) Tuck.

✓ 95. *R. SOPHODES* (Ach.) Tuck.

96. *R. FLAVA-NIGELLA*, Tuck.

97. *R. CONSTANS* (Nyl.) Tuck.

PERTUSARIA, DC.

✓ 98. *P. VELATA* (Turn.) Nyl.—Common on *Quercus*.

× 99. *P. MULTIPUNCTATA* (Turn.) Nyl.—Large and fine; on *Ilex*.

× 100. *P. COMMUNIS*, DC.—*Porina pertusa* (L.) Ach., is a synonym; common.

× 101. *P. LEIOPLACA* (Ach.) Schaer.—Abundant; might be mistaken for *P. Wulfenii*, but the color is lighter.

102. *P. PUSTULATA* (Ach.) Nyl.—Quite distinct from others in the form of the apothecia; color variable also.

103. *P. WULFENII*, DC.—A marked species, suggesting in appearance *Thelotrema* (Syn. *Thelo. hymenium*, Turn. & Borr.) Allied to *P. leioplaca*, but the spores are eight in the thekes.

CONOTREMA, Tuck.

× 104. *C. URCEOLATUM* (Ach.) Tuck.

GYALECTA (Ach.) Anzi.

105. *G. LUTEA* (Dicks.) Tuck.

- Q 106. *G. PINETI* (Schräd.) Tuck.—On old *Polyporus*.
 URCEOLARIA, Ach. Fl.
- ∖ 107. *U. SCRUPOSA* (L.) Nyl.—Does not appear to be common in Florida. Have only found it on *Carpinus Caroliniana* (Calkins).
- ∖ 108. *U. ACTINOSTOMA*, Pers.—Occasional.
 THELOTREMA (Ach.) Eschw.
- ∖ 109. *T. SUTILE*, Tuck.—Abundant on *Carpinus* (Calkins).
- ∖ 110. *T. DOMINGENSE* (Fee., Nyl.) Tuck.—Common on *Ulmus* (Calkins); of tropical derivation.
- ∖ 111. *T. DOMINGENSE*, var. *RHODOSTROMA*, Nyl.—An elegant species; found on *Carpinus* (Calkins, Austin).
- ∖ 112. *T. LEPADINUM*, Ach.—On *Persea*; not common.
- 113. *T. LEPROCARPUM* (Nyl.) Tuck.—Not common.
- Q 114. *T. GLAUDESCENS*, Nyl.—Rare on old logs; also in Cuba.
- 115. *T. LEPADODES*, Nyl.—On various trees.
- 116. *T. MICROPORUM* (Mont.) Herb. Ravenel.
- 117. *T. LATHRÆUM*, Tuck., Herb. Austin.
- 118. *T. GRANULOSUM*, Tuck., Herb. Austin.
- 119. *T. AUBERIANUM*, Mont., Herb. Austin.
- 120. *T. WRIGHTII* (Tayl.) Nyl.
- ∖ 121. *L. RAVENELII* (Tuck.) Nyl.
 GROSTOMUM, Fr. GYROSTOMUM.
- ∖ 122. *G. SCYPHULIFERUM* (Ach.) Fr.—Very common.
 MYRIANGIUM, M. & B.
- ∖ 123. *M. DURLEI* (M. & B.) Tuck.—Common in Cuba also. *M. Curtisii*, M. & B., is the same.

LECIDEACEÆ.

CLADONIEI.

CLADONIA, Hoffm.

- × 124. *C. SYMPHYCARPA*, Fr.—Common on earth.
- × 125. *C. MITRULA*, Tuck.—Abundant on old logs and damp earth.
- × 126. *C. PYXIDATA* (L.) Fr.
- 127. *C. PYXIDATA*, var. *POCILLUM*, Ach.—On earth.
- × 128. *C. SQUARROSA*, Hoffm.
- × 129. *C. FIMBRIATA* (L.) Fr.—Common.
- 130. *C. FIMBRIATA*, var. *TUBÆFORMIS*, Fr.
131. *C. GRACILIS* (L.) Nyl.
- × 132. *C. GRACILIS*, var. *VERTICELLATA*, Fr. (*Cenomyce Floridanum*, Herb. Schw.
- × 133. *C. PAPILLARIA* (Ehrh.) Hoffm.
- × 134. *C. SANTENSIS*, Tuck.—On earth.
- × 135. *C. FURCATA* (Huds.) Fr.
- ∖ 136. *C. FURCATA*, var. *RACEMOSA*, Fl.
- ∖ 137. *C. FURCATA*, var. *SUBULATA*, Fl.
- × 138. *C. RANGIFERINA* (L.) Hoffm.—On trees and on the ground, forming beautiful tufts, unattached, which are highly prized for decorative purposes. A cosmopolite. We have noticed acres of it on the

mountains of Tennessee and Georgia in masses one foot thick.

139. *C. RANGIFERINA*, var. *SYLVATICA*, L.

140. *C. RANGIFERINA*, var. *ALPESTRIS*, L.

141. *C. UNCIALIS* (L.) Fr.

142. *C. PULCHELLA*, Schw.

143. *C. RAVENELII*, Tuck.

144. *C. CRISTATELLA*, Tuck.

145. *C. LEPORINA*, Fr.

CÆNOGONIEL.

CÆNOGONIUM, Ehrh.

146. *C. INTERPOSITUM*, Nyl.—Common; also in Cuba.

(To be continued.)

TRICOTHECIUM GRISEUM, CK. (PYRICULARIA, SACC.)

My colleague, Dr. Kellerman, finds this in Kansas on a species of *Muhlenbergia* associated with *Phyllachora graminis*, Pers., on the stroma of which it is parasitic (?) or of which, more probably, it constitutes the conidial stage. It does not differ from the normal form on *Panicum* otherwise than in its arising directly from the stroma of the *Phyllachora*. What may also be a form of the same was found on withered leaves of *Paspalum setaceum* growing as before directly from the stroma of the same *Phyllachora* or more or less effused around it, but differing from the form on *Muhlenbergia* in its darker colored (olivaceous) hyphæ, often dichotomously branched above, and in its longer, narrower conidia, which are oblong-fusoid, subhyaline, one-septate at first, but finally three-septate, $25-35 \times 5-7 \mu$. With these conidia, however, were some which presented very nearly the normal shape, unless a little narrower. We have called this latter form *Tricothecium griseum*, Ck., var. *leptosperma*, E. & K. J. B. E.

NEW SPECIES OF FUNGI FROM KANSAS.

BY J. B. ELLIS AND W. A. KELLERMAN.

VERMICULARIA CICADINA, E. & K.—On membrane of the wings of dead Cicada. Manhattan, Ks., September, 1887. Kellerman & Swingle, 1087. Perithecia scattered, depressed-hemispherical, $100-120 \mu$ in diameter, sparingly clothed with erect, spreading, opaque, continuous bristles about 75μ long and sub-bulbous at the base; sporules arcuate-fusoid, ends subacute, hyaline, about $22 \times 2\frac{1}{2} \mu$, on clavate, oblong-basidia, about $10 \times 2\frac{1}{2} \mu$. The fungus is also found, but in an immature condition, on living Cicadæ.

PERONOSPORA LINI, E. & K.—On *Linum sulcatum*. Manhattan, Ks., Sept., 1887. Kellerman & Swingle, 1077. Sparsely scattered on the stems and leaves; conidiophores about half a millim. high, subfastigiately dichotomously branched above, the tips slender and very slightly curved; conidia elliptical, yellowish-brown, $20-22 \times 11-13 \mu$. Oospores not seen.

CERCOSPORA VULPINA, E. & K.—On living leaves of *Vitis vulpina*. Manhattan, Ks., Sept., 1887. Kellerman & Swingle, 1081. Spots amphigenous, small (1–2 millim.), subangular, mostly limited by the veinlets, dark brown above, rather paler beneath; hyphæ mostly hypophyllous, fasciculate, pale brown (subfuliginous), continuous or with 1–3 faint septa, distinctly toothed and abruptly bent above, $50-75 \times 3-4 \mu$; conidia obclavate, smoky-hyaline, nucleate and finally 2–3-septate, curved, $45-60 \times 3-4 \mu$. This differs essentially from the other viticous species.

SPHÆRELLA SOLIDAGINEA, E. & K.—On dead leaves of *Solidago Canadensis*. Manhattan. (Kellerman & Swingle, 1115.) Perithecia erumpent-superficial, $80-100 \mu$ in diameter, subglobose, of rather coarse, cellular structure, pierced above, scattered or collected in groups; asci $35 \times 9-10 \mu$; sporidia biseriate, clavate-oblong, nucleate, slightly constricted near the middle, $20 \times 3\frac{1}{2} \mu$, hyaline.

FUSARIUM PARASITICUM, E. & K.—Parasitic on *Puccinia Seymeriæ*, Burrill. On *S. macrophylla*, Manhattan, Kas., October, 1887. (Kellerman & Swingle, 1104.) Forming a thin, grayish-white layer on the sori of the *Puccinia*; hyphæ short (35μ), much branched above; conidia lunate, attenuated and acute at each end, faintly about three-septate, $20-30 \times 3 \mu$.

CERATOPHORUM ULMICOLUM, E. & K.—On living leaves of *Ulmus fulva*. Manhattan, Kas. (Kellerman & Swingle, 1112.) Maculicolous; spots amphigenous, suborbicular, dirty-brown, with a small, white center, $\frac{1}{2}-1$ cm. across, subconfluent; conidia ventricose-fusoid, attenuated below into a subhyaline, subobtuse, sessile base and prolonged above into a curved, hyaline beak, swollen, dark olivaceous and 5–7-septate in the middle, $60-100 \times 11-14 \mu$. The conidia are sessile on a small, tubercular, cellular base and form compact tufts, which resemble a *Vermicularia*. The tufts are amphigenous, but perhaps more abundant above and are not confluent but thinly scattered over the spots. This is intermediate in the size of the conidia between *C. helicosporum*, Sacc., and *C. uncinatum*, Clinton, and differs from both of these in its tufted or punctate mode of growth, in which it resembles *C. epiphyllum*, B. & C., which, however, has much smaller, multiseptate conidia. The subhyaline extremities of the conidia are faintly septate and sometimes one or more of the cells in the colored part has a longitudinal septum.

NEW SPECIES OF FUNGI FROM VARIOUS LOCALITIES.

BY J. B. ELLIS AND B. M. EVERHART.

SPHÆRIA (METASPHÆRIA) STENOTHECA, E. & E.—On sheaths of dead culms of *Panicum Curtisii*. Pointe à la Hache, La., February, 1887. Langlois, No. 1028. Perithecia scattered, membranaceous, subovoid, one-fourth millim. in diameter, buried in the matrix except the rather prominent, depressed, conoid apex, which is covered by the blackened

cuticle (except the papilliform ostiolum); asci linear, $70-80 \times 4-5 \mu$, with indistinct paraphyses; sporidia in a single series, with their ends mostly overlapping, oblong-fusoid, 3-4-nucleate, becoming three septate, subhyaline, $12-16 \times 3 \mu$. Quite distinct from other graminicolous species in its narrow, linear asci.

SPHÆRELLA STAPHYLINA, E. & E.—On living leaves of *Staphylea trifolia*. Manhattan, Kas., July, 1887. W. T. Swingle. Maculicola; spots amphigenous, irregular, often narrow and elongated, mostly few on a leaf, 2-4 millim. or sometimes $1-1\frac{1}{2}$ cm. and occasionally occupying an entire half of the leaf, causing the affected part to dry up and fall away; perithecia minute, visible on both sides, sublenticular and subastomous, membranaceous, black, $75-100 \mu$ diameter; asci oblong, sessile, $40-6 \times 12 \mu$, without paraphyses; sporidia crowded-biseriate, oblong-elliptical, subinequilateral, one-septate and constricted, yellowish-hyaline, $12-15 \times 5 \mu$, accompanied by a macrosporium and by smaller stylosporiferous perithecia, containing elliptical, subfuscous, continuous spores, about $5 \times 2\frac{1}{2} \mu$.

DENDRYPHIUM SUBSESSILE, E. & E.—On dead stems of *Smilax hispida*. Manhattan, Kas., July, 1887. W. T. Swingle. Forming a more or less continuous, thin, black layer on the surface of the stems; hyphæ almost obsolete; conidia concatenate, subsessile, subcylindrical, brown, about five-septate, $25-45 \times 6-7 \mu$, 2-4 concatenate.

VENTURIA ERYSPHIODES, E. & E.—On dead culms or sheaths of *Panicum Curtisii*. Pointe a la Hache, La., February, 1887. Langlois, No. 1023. Perithecia gregarious, black, globose, about 100μ in diameter, broadly perforated above, beset with scattering, rigid, black continuous bristles, $40-70 \times 5-6 \mu$; asci oblong, sessile, without paraphyses, $40-45 \times 7-8 \mu$; sporidia crowded, fusiform, hyaline, slightly curved, 5-6-nucleate, about $20 \times 2\frac{1}{2} \mu$. This differs from *V. graminicola*, Winter, in its smaller perithecia ($80-110 \mu$) with shorter, lateral bristles and its narrower sporidia ($2-2\frac{1}{2} \mu$). The number of bristles on a perithecium is generally not over ten or twelve and they stand out horizontally or nearly so, reminding one of some of the *Erysipheæ*.

GLEOSPORIUM LIRIODENDRI, E. & E.—On leaves of *Liriodendron Tulipifereæ*. Faulkland, Del., August, 1887. A. Commons. Maculicola; epiphyllous; spots ochraceous, round, border darker; acervuli minute, pale, innate; spores oblong, $12-16 \times 5 \mu$, hyaline, ends obtuse, cirrhi punctiform, minute or, by confluence, larger and flattened, flesh color.

GLOEOSPORIUM DECIPIENS, E. & E.—On living leaves of *Fraxinus Americana*. Manhattan, Kas. July, 1887. W. T. Swingle. This resembles outwardly *G. punctiforme*, E. & E., on leaves of *Fraxinus Americana* from Delaware. The spores, however, are quite different from those of the Delaware specimens, which are $15-22 \times 7-8 \mu$, one-septate and constricted, while these are $22-50$ (mostly $35-50$) $\times 3-5 \mu$ (mostly $4-5 \mu$), probably becoming one-septate, as a few have the endochrome faintly divided in the middle. This species, with *G. Argemonis* and *G. rostratum*, have the elongated, cylindrical spores (conidia) of *Cylindro-*

sporum, but the larger acervuli and the firmly conglutinated mass of ejected spores are of the same character as in *Gloeosporium*. In all the genuine species of *Cylindrosporium*, the spores are ejected from the minute and usually numerous acervuli in loosely floccose or pulverulent masses which are usually more or less confluent. *Cylindrosporium Padi*, Karst., belongs in this same category.

* **GLOEOSPORIUM DIOSPYRI**, E. & E.—On leaves of *Diospyrus Virginianus*. Falkland, Del., August, 1887. A. Commons, No. 606. Acervuli innate, erumpent on the upper side of the leaf on the veinlets of the leaf in small, pale-tuberculiform masses; spores ovate, granular, $6-14 \times 5-7 \mu$. The leaf is more or less yellow and the part occupied by the fungus dull olive-brown.

GLOEOSPORIUM PRUNICOLUM, E. & E.—On living leaves of *Prunus Virginiana*. Racine, Wis., July, 1887. Dr. J. J. Davis. Maculicola; spots irregular, 3–10 millim. in diameter, dark rusty brown, finally deciduous; acervuli innate, minute; spores elliptical, mostly $4-6 \times 2\frac{1}{2} \mu$, discharged in minute, whitish heaps on both sides of the leaf but more abundantly below.

GLOEOSPORIUM NECATOR, E. & E.—On living canes of black and red raspberry. Sent from Evanston, Ill., by Chas. Wheeler, August, 1881, and from Cobden, Ill., by F. S. Earle, June, 1884; also received from Columbia, Mo., June, 1887, from B. T. Galloway. Spots cauliculous, pale, with a slightly raised, dark border, 2–3 millim. in diameter, orbicular or elliptical; spores oblong-elliptical, $5-7 \times 3 \mu$, oozing out in an amber-colored mass through a single opening in the center of each spot. Reported as being very injurious. *G. Venetum*, Sacc., has spores of about the same size but is a foliicolous species. The Illinois specimens were reported as *Phyllosticta necator*, but the fungus is evidently a *Gloeosporium*.

GLOEOSPORIUM ARGEMONIS, E. & E.—On living leaves of *Argemone platyceras*. Manhattan, Kas., July, 1887. W. T. Swingle. Maculicola; spots amphigenous, definite, suborbicular, dirty gray above, purplish black below and subzonate, mostly about a half cm. in diameter, with a slightly raised, narrow margin; acervuli minute, scattered, mostly erumpent below, discharging the spores in small yellowish and amber-colored heaps; spores subcylindrical, arcuate, hyaline, granular and nucleolate, mostly a little narrower at one end, $22-40 \times 2\frac{1}{2}-3 \mu$.

GLOEOSPORIUM ROSTRATUM, E. & E.—On living leaves of *Corylus rostrata*. British Columbia, May, 1887. Prof. John Macoun. Maculicola; spots amphigenous, subrotund, 1–2 millim. in diameter, pale rust color, margin narrow and darker; acervuli minute, mostly clustered in the center of the spots, amber color, epiphyllous; spores cylindrical, curved, $35-45 \times 2\frac{1}{2}-3 \mu$, granular and nucleate, with indications of becoming at length three-septate. This is quite different from *G. Coryli* (Desm.), which is mostly hypophyllous and has spores $12-15 \times 5-6 \mu$.

CYLINDROSPORIUM RANUNCULI (Bon.) f. **THALICTRI**, E. & E. On fading leaves of *Thalictrum purpurascens*. Manhattan, Ks. W. T. Swingle. Spots amphigenous, irregular, more or less angular, with a narrow, darker margin, dark brown, becoming more or less dirty whitish; acervuli innate, discharging the spores below in small, light-colored heaps; spores filiform, more or less curved, continuous, $30-60 \times 1\frac{1}{4} \mu$. Probably *C. Clematidis*, E. & E. (JOUR. MYCOL., III, p. 22) should also be considered as a variety of this species, which is represented and figured by both Bonorden and Saccardo as quite variable in the thickness and length of its spores.

CYLINDROSPORIUM CAPSELLÆ, E. & E.—On living leaves of *Capsella Bursa-pastoris*. Columbia, Mo., May, 1887. B. T. Galloway, No. 253. Spots amphigenous, round (1—4 millim.), mostly a little depressed above, whitish; conidia erumpent above, giving the surface of the spots a farinose appearance, cylindrical, granular, becoming faintly three-septate, the middle septum being more distinct, $35-45 \times 3 \mu$; hyphæ consisting of slightly elongated cells of the proligerous layer. This is quite a different thing from *Cercospora Cruciferarum*, E. & E.

PHYLLOSTICTA GERANII, E. & E.—On living leaves of *Geranium Carolinianum*. Point a la Hache, La., March, 1887. Langlois, No. 1096. Spots amphigenous, small (1— $1\frac{1}{2}$ millim.), round or subangular, whitish above, rusty color below, margin narrow, darker and slightly raised; perithecia few, punctiform, black, erumpent, mostly epiphyllous; sporules subelliptical or suboval, hyaline, $2\frac{1}{2}-3 \times 1 \mu$.

PHYLLOSTICTA STILLINGIÆ, E. & E.—On leaves of *Stillingia sebifera*. Point a la Hache, La., November, 1886. Rev. A. B. Langlois, No. 847. Spots amphigenous, definite, reddish-brown, not abundant, 2—3 millim. in diameter; perithecia epiphyllous, scattered, few, dark, convex; sporules oblong-elliptical, two-nucleate, hyaline, $5-7 \times 2\frac{1}{2}-3 \mu$.

PHYLLOSTICTA YUCCÆGENA, E. & E.—On leaves of *Yucca*. Florida. W. W. Calkins, No. 773. Spots amphigenous, discoid, oblong or acutely elliptical, concave on both sides and with an obtuse, raised border, $1-2 \times \frac{1}{2}$ cm.; perithecia immersed, large ($\frac{1}{2}$ millim.), scattered, amphigenous, sometimes subconfluent, raising and rupturing the epidermis; sporules hyaline, with coarse, granular contents or nuclei, irregularly elliptical and subinequilateral, ends subacute, $18-22 \times 7-8 \mu$. The same thing occurs without any spots on younger, thinner leaves (No. 774).

P. Gaultheriæ, E. & E., has been sent by Prof. J. Macoun from British Columbia on leaves of *Gaultheria Shallon*, differing from the New Jersey specimens (on *G. procumbens*) only in the less numerous perithecia and sporules more generally globose.

(To be continued.)

NEW LITERATURE.

BY W. A. KELLERMAN.

"*AECIDIUM ON JUNIPERUS VIRGINIANA.*" W. G. Farlow, Botanical Gazette, September, 1887.

On a visit to Bermuda in the winter of 1881, Dr. Farlow searched in vain for a species of *Gymnosporangium*. He found, however, galls similar to those caused by those species on cedars (*Juniperus Bermudiana*), which subsequent examination proved to be caused by an *Aecidium*. Better material was afterward (in the spring) received from Mississippi, found on *Juniperus Virginiana*. The new species has been named *Aecidium Bermudianum*, Farlow. Dr. Farlow suspects that the "present *Aecidium* has no connection with our known *Gymnosporangia* and that its other stages may very likely be traced to other *Uredineæ* which inhabit warmer regions near the Gulf of Mexico and the Atlantic."

"THE 'CURL' OF PEACH LEAVES: A STUDY OF THE ABNORMAL STRUCTURE, INDUCED BY *EXOASCUS DEFORMANS*." Etta L. Knowles. l. c.

"NOTICE SUR DEUX MUCEDINEES NOUVELLES, L' *ISARIA CUNEISPORA* OU ETAT CONIDIAL DU *TORRUBIELLA ARANICIDA*, BOUD., ET LE *STILBUM VIRIDIPES*." Par M. Boudier, Revue Mycologique, 1er Octobre, 1887.

"*ASCOMYCETES NOVI FENNICI.*" Descriptis P. A. Karsten. l. c.

"CONTRIBUTIONES AD FLORAM MYCOLOGICAM LUSITANIE." Fungi Lusitanici a Cl. Moller lecti, Auctoribus Dr. A. N. Berlese et C. Roumeguere. l. c.

"*FUNGI GALLICI EXSICCATI.*" Centurie XLIIIe. C. Roumeguere. l. c.

"LES CARACTERES DISTINCTIFS DES ROT DE LE VIGUE." Par J. E. Planchon. l. c.

"LES CHAMPIGNONS DESTRUCTEUR DU PLATANE." C. Roumeguere. l. c.

"DU PARASITISME DES TRUFFES." H. Bonnet. l. c.

"CATALOGUE PROVISoire DE PLANTES PHANEROGAMES ET CRYPTO-GAMES DE LA BASSE-LOUISIANE, ETATS-UNIS D' AMERIQUE." A. B. LANGLOIS.

ERRATA.

On page 81, current volume, under *Septoria punicea*, Pk., for "10—45 μ " read "100—150 μ ." On page 111, bottom line, for "said" read "dried."

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